UNITED STATES GOVERNMENT

memorandum

DATE: DEC 6 1985

REPLY TO ATTN OF: Regional Refuge Supervisor, FWS, Twin Cities, MN (RF1)

SUBJECT: Fishery Management Plan

TO: Refuge Manager, Ottawa NWR, Oak Harbor, OH

We have reviewed and approved the subject plan. This is a good plan and well written.

Richard E. Toltzmann

Attachment

RECEIVED

DEC 09 1985

OTTAWA NATIONAL WILDLIFE REFUGE
OAK HARBOR OHIO

	MANAGER	MM
	ASS'T I	
	ASS'T II	
	REC PLNR	
	ADM TECH	
	MAINT	
	EQ OP'R	
	TR OP'R	

OPTIONAL FORM NO. 10
(REV. 1-80)
GSA FPMR (41 CFR) 101-11.6
5010-114

☆ U.S. GOVERNMENT PRINTING OFFICE : 1983 O - 381-526 (8238)

FISHERY MANAGEMENT PLAN

OTTAWA NATIONAL WILDLIFE REFUGE COMPLEX

OAK HARBOR, OHIO

SUBMITTED BY: Michael G. Tansy
Refuge Manager

DATE: 11/26/85

CONCURRENCE: R. L. Took
RF1 Supervisor

DATE: 12/2/85

CONCURRENCE: John Popowski
Assistant Regional Director Fisheries (AF)

DATE: 12/3/85

CONCURRENCE: for Thomas J. Dahlgren
Acting Assistant Regional Director Wildlife Resources (AW)

DATE: 12/5/85

Fishery Management Plan

Table of Contents

FISHERY MANAGEMENT PLAN

OTTAWA NATIONAL WILDLIFE REFUGE COMPLEX

OAK HARBOR, OHIO

I. RELATIONSHIP OF FISHERY MANAGEMENT TO REFUGE OBJECTIVES

The Ottawa National Wildlife Refuge Complex is comprised of five units: the Ottawa, Darby and Navarre divisions, Cedar Point, and West Sister Island.

The Ottawa Division was established in July, 1961 with land acquired under the authority of the Migratory Bird Conservation Act to preserve a portion of the remaining Lake Erie marshes. West Sister Island was established as a refuge in August, 1938 by Presidential Order. Cedar Point was donated to the Service and accepted by the Secretary of Interior in December 1964. Darby was acquired in 1966 in exchange for Navarre, with the agreement that most of Navarre would remain under management for wildlife under conditions of a 25- and 50-year lease. Today, these five separate parcels of land are the Ottawa National Wildlife Refuge Complex. (See Exhibit 1 for location of the Refuge Complex.)

The city of Todedo is within an hour's drive of Ottawa NWR. At approximately two hour's driving distance are Cleveland, Detroit, Ann Arbor, Akron, Columbus, and Dayton. The refuge is within the bounds of an 8 million person megalopolis. Currently, it is receiving about 111,000 visitors per year, who primarily visit the refuge for bird watching and wildlife observation. Sport fishing is a popular recreational activity in the vicinity of the refuge. Between Toledo and Port Clinton there are 14 public owned shore fishing facilities with a parking capacity of 2230 cars (Table 2). Some of the best walleye sport fishing in the United States can currently be found offshore of the Refuge Complex in Lake Erie. The fishable population (fish age 2 years and older) of walleye present in the Ohio waters of the Lake in 1983 was approximately 21 million. Based on Ohio DNR surveys of angler utilization of Ohio's Lake Erie waters an estimated 9.8 million angler hours were spent fishing the Lake in 1983. Lake sport fishery effort and harvest levels for the past five years are presented in Table 1 and Figure 17 in the appendix.

Sport fishing on national wildlife refuges is within Fish & Wildlife Service policy when it can be conducted in such a way that does not conflict with the management objectives of the refuge.

Management objectives for Ottawa National Wildlife Refuge Complex are:

1. To provide nesting and feeding habitat for the endangered bald eagle.

2. To provide suitable nesting habitat for ducks, geese, swans and other migratory birds.

3. To provide maintenance habitat for migratory waterfowl (ducks,

geese and swans), marshbirds, shorebirds, gulls, terns, and raptors -- especially during spring and fall migrations.

4. To provide habitat for the maintenance of balanced populations of all resident wildlife species.

5. To provide the public with wildlife-oriented recreation opportunities when this objective is campatible with the first four objectives.

Specific objectives of fishery management at Ottawa NWR and on national wildlife refuges are to:

A. To provide the general public with high quality wildlife oriented recreation and an opportunity to utilize a renewable resource.

B. To maintain fish populations at levels compatible with the refuge habitat.

C. To minimize undesirable competition among species.

D. To minimize short and long term fluctuations in fish populations and habitat quality.

II. WILDLIFE USE AND PRODUCTION

The western shoreline of Lake Erie was once dominated by 300,000 acres of the "Black Swamp" and now only approximately five percent of that wetland remains in Ohio. By 1974, the original 300,000 acre wetland had been reduced to about 14,000 in Ohio.

The refuge total acreage is 8,316 acres of which 5,456 acres are either open pools, marsh, moist soil units or borrow pits. All wetlands are shallow and all but a few are dominated by carp, shad, bullheads, and other species commonly considered rough fish. Rough fish have access to almost all refuge waters due to spring run-off and wind tides from Lake Erie. Carp feeding and spawning activity keeps impoundments more turbid than they might otherwise be and reduces their suitability for submergent and emergent vegetation establishment. Water level fluctuations of 12 feet can occur on the lake and connected ditches in a short period. Water level management in most units is dependent on gravity drainage and filling. Fish movement to and from most refuge waters is for the most part uncontrollable. Winter kill of fish is a problem in many shallow impoundments. Botulism disease of waterfowl has been a serious problem in the past and large numbers of dead carp found in late summer in some marshes provide carcasses for the spread of the disease.

The 5,456 acres of wetlands at the Ottawa Complex receive a high level of wildlife use. Duck use over the past ten years has ranged from a low of one million to a high of five million with an average of approximately three million use days per year. Goose use days range from one to two million per year. Marsh and water bird use approaches one million use days with shorebirds, gulls and tern use over one million per year. The endangered bald eagle nest in two units of the refuge. Annual wetland wildlife production

at the complex is as follows: duck and geese, 500 to 2,000 each; marsh and water birds, 4,000 to 6,000; shorebirds, gulls and terns, up to 500; bald eagles, 2 to 5; wetland mammals 6,000 to 10,000.

Wildlife use and production is closely tied to the aquatic resources of the refuge. The over 2,100 pairs of herons and egrets nesting on West Sister Island spend a high percentage of their time foraging on refuge wetlands. Waterfowl broods are dependent on quality brood cover and the interspersion of aquatic plant communities. Eagles depend on the shallow marsh waters for fish as do migrating osprey in spring and fall. The fishery resources of the refuge are critical to a wide variety wildlife and the availability of balanced forage fish populations needs to be maintained.

III. COMMERCIAL FISHING

The impact of carp on submerged and emergent aquatic vegetation is a major problem at Ottawa. Rough fish, in particular carp, cause increases in turbidity due to spawning, feeding and swimming activities in shallow waters. Spawning frenzies in shallow waters are observed throughout the refuge in May and early June. Discharge of warmer impoundment waters draws carp by the thousand into the impoundments each spring. Drainage from farmland ditches also provides carp access to refuge impoundments. A variety of screens and grates have been used in the past to reduce the numbers of carp permitted to enter. Their success in keeping carp out has been generally poor with a high degree of maintenance required.

Water turbidity in shallow refuge impoundments is due to wave action against the bottom, wave action caused erosion along unprotected dikes and road banks, runoff from adjacent lands, clay soil types and carp activity. The degree of carp involvement in the turbidity problem appears to be significant in some areas. Most shallow water areas develop emergent and submergent vegetation given the proper water depths but some areas do not develop vegetation probably due to carp activity.

Commercial fishing is a management option that should be evaluated in pools where carp are thought to be a major factor in poor vegetative responses. Strict controls of fishing operations in regard to location and timing would keep disturbance to wildlife to a minimum.

Trap or gill nets located in carp concentration areas would permit large numbers to be removed with little wildlife disturbance. In the spring or fall locations such as pumping stations, water control structures and drainage pipes would provide ideal low wildlife disturbance sites for carp removal. Removal of fish at these select sites should reduce the numbers of adult fish in those pools and provide an opportunity to evaluate the effectiveness of carp reduction in aquatic plant management. Sufficient numbers of adult fish should persist to repopulate those commercially trapped pools with young fish for bird forage.

IV. LEGAL AND POLITICAL CONSIDERATIONS

Since establishment in 1961 a majority of the refuge has been closed to the

general public with access provided only by special use permits which were closely regulated. The justification given for the closed status was to provide for areas of undisturbed wildlife habitat for the large numbers of birds migrating through and nesting on the refuge. Uncontrolled access throughout the year was deemed uncompatible. If areas closed to the public since 1961 are opened for fishing, some individuals and groups may question why the uncompatibility status of general access has changed. By meshing those waters that can provide a reasonable expectation for a sports fishery, with seasonal timing and selection of low wildlife use areas, questions regarding uncompatibility will be answered.

V. PUBLIC USE

The interpretation and recreation program at the refuge provides the visiting public with wildlife-oriented recreation and environmental education opportunities when these activities are compatible with the primary wildlife management objectives of the refuge.

Approximately 95% of public visitation to the refuge occurs on the 7½ miles of wildlife oriented self-guided trails at the Ottawa division. The remaining 5% of use involves environmental education and birding group use of Butternut Lodge and hunting and trapping activities. At the present time there is no public fishing officially authorized at the Ottawa Complex. The dikes surrounding pools 2 a, b, and c at the Ottawa division comprise over 4 miles of the 7½ mile trail system and fishing access by vehicle to adjacent waters would not be compatible with existing trail use. Due to the narrowness of the dike tops, two vehicles cannot pass and even if they could, hikers using the dikes would not safely mix with fishing vehicular access. The current parking area at the beginning of the trail system is not large enough to accommodate existing demand during peak visitation months of fall and spring and additional visitors during peak seasons will cause increased parking problems. Proposed fishing areas that meet the compatibility requirements and have the water depth, potential or existing fishery and access will not conflict with any existing or proposed public use development plans.

VI. SPECIFIC UNIT PLANS

In evaluating refuge waters for fishing opportunities the following factors were used to determine whether fishing could be permitted:compatibly with wildlife values; water depth and water management programs; access to the site, shoreline and fishable water depth; and ability to administratively control use. Impoundments within each division are grouped according to water management programs.

Ottawa Refuge

1. Ottawa Division	Acres	Proposed Fishing
Area 1 Pool 1	275	Limited carp removal
Pool 2a	70	Limited carp removal
Pool 2b	90	Limited carp removal

Ottawa Division		Acres	Proposed Fishing
	Pool 2c	80	Limited carp removal
Area 2	Pool 3	200	No fishing
	Pool 4	140	No fishing
	Pool 5	200	No fishing
	Pool 6a	110	No fishing
	Pool 7	100	No fishing
	Pool 8	180	No fishing
Area 3	Mini-Marsh	16	Limited carp removal
	Entrance Road	35	Limited carp removal
	Show Pool	30	Limited carp removal
Area 4	Moist Soil Unit 3	213	No fishing
	Moist Soil Unit 4	106	No fishing
	Moist Soil Unit 5	250	No fishing
	Moist Soil Unit 7a	49	No fishing
	Moist Soil Unit 7b	44	No fishing
	Moist Soil Unit 8a	47	No fishing
	Moist Soil Unit 8b	85	No fishing
Area 5	Metzger Marsh Bay	160	Sport & Commercial fishing (year round)
Area 6	Crane Creek/Rader Ditch	106	No Fishing
		2,596	

Area 1 (Limited carp removal only)

Pools 1, 2a, 2b and 2c are marsh units that are periodically drawn down in summer with water levels raised in fall for waterfowl and wading bird use. Waterfowl and wading bird use is high in all four pools with geese and duck brood use in summer. Only those fish that can survive in very shallow, low disolved oxygen waters make it through drawdown cycles. Dikes surround each pool with the dikes around 2a, 2b and 2c comprising 4 miles of the public use trail system. Sport fishing is not proposed for any of the pools in area 1 due to water drawdown programs, dense vegetation and wildlife use. Commercial harvest of adult carp in all four pools will be conducted at water control structures for brief periods under limited, controlled conditions.

Area 2 (No fishing proposed)

Pools 3, 4, 5, 6a, 7 and 8 are shallow water pools that are open to the lake along Crane Creek. The dike system that protected and provided for water level control in area 2 was destroyed during lake storms. During periods of southwesterly winds water in these pools is drawn out into the lake via Crane Creek leaving vast expanses of exposed mudflats. Emergent and submergent vegetation is dense in sheltered portions with open shallow water predominant in a majority of the unprotected areas. Carp activity is high in these pools. If funds become available, the dikes protecting and providing water control in area 2 will be rebuilt. Waterfowl use is moderate with wading and shorebird use high. An active bald eagle nest is located between pools 4 and 5. Due to the high wildlife values and the shallowness of the pools neither sport or commercial fishing is proposed

for any pools in area 2. Limited carp harvest would be conducted if water control is regained.

Area 3 (Limited commercial fishing only)

The Mini-Marsh, Entrance and Show Pools are small, shallow pools that receive a high level of waterfowl, wading bird and shorebird use. Water is drawn down in all three units during the summer and carp activity is high. The Mini-Marsh contains dense stands of cattails and would be impossible to fish. Observation from vehicles of wildlife along the Entrance pool is high and fishing activity would distract from wildlife viewing opportunities and could create parking and traffic problems along the Entrance road. The Show Pool located at the headquarters is very shallow and receives high Canada Goose brood and wading bird use during the summer. Sport fishing in any of the pools in area 3 is not proposed. Commercial carp harvest may be conducted, at most 2 or 3 days per year on each pool at control structures.

Area 4 (No fishing proposed)

The moist soil units contain shallow water up to 2 feet in depth from mid-September to May and are dry June, July and August. Each unit is rotated out of a wet condition every few years and placed in a totally dry state for one year. Waterfowl, shore and wading bird use is high. The only fish found in these units are small forage fish that are pumped in or flow in and adult carp that survive in the drainage ditches. No sport or commercial fishery potential exists in any of the moist soil units.

Area 5 (Sport and commercial fishing proposed)

Metzger Marsh Bay is a shallow water area open directly to Lake Erie. It is adjacent to the Ohio DNR Metzger Marsh Wildlife Area. Public access to the area has not been controlled since the refuge was established in 1961 and public fishing has always been permitted. Waterfowl use is moderate in fall and spring with marsh and shorebird use low. Water depth varies with the lake and is from 1 to 6 feet deep. Rough water and ice action makes it administratively impossible to sign the area and control use in the refuge portion of the Bay. Sport and commercial fishing per state regulation is proposed for the open water section of Metzger Marsh Bay owned by the refuge. Access would be by boat only with an Ohio DNR lauching ramp located ¼ mile away at the edge of the marsh. Fishery available includes carp, freshwater drum, channel and bullhead catfish, white bass and other species common to the shoreline of Lake Erie. No refuge facilities would be required in officially opening the Bay to public fishing.

Area 6 (No fishing proposed)

Crane Creek and Rader Ditch are lake tributaries draining many square miles of farmland. Crane Creek flows through the center of the Ottawa Division and provides water for most of the pools and moist soil units. The creek is low gradient, warm water stream averaging 60 feet in width and three feet in depth. Its depth fluctuates with that of Lake Erie and during southwesterly winds draws down to ankle deep in most locations. Rader Ditch drains farmland to the south of the refuge, is approzimately 30 feet wide and

Ottawa Division

3 feet deep and empties into Crane Creek ½ of a mile from the creek's mouth at the lake. Fish species found in the ditch are similar to those found in Crane Creek. Access to the creek is by water from the lake or the creek crossing on Route 2, the public use trail system surrounding pools 2a, b, and c and Stange Road.

The Stange Road bridge crossing of Crane Creek passes along the western edge of moist soil unit 7a and pool 7. Both units receive considerable waterfowl and wading bird use throughout the year. Moist soil unit 7a provides post breeding habitat for hundreds of mallard from early to mid summer, feeding habitat for a considerable number of herons and egrets and brood rearing habitat for Canada geese. Any activity along Stange Road north of the refuge quarters #3 causes most birds using the moist soil unit to leave. Fishing access to the Stange Road bridge over Crane Creek would not be compatible with wildlife use of the area. Access to the creek by boat would create serious safety hazards in that it would encourage parking at the intersections of Route 2 and Crane Creek. Individuals with car top carriers using canoes and small flatbottom boats would and do launch from the Route 2 location which is just a wide spot on the shoulder of the highway. Route 2 from Toledo to Port Clinton is one of the more dangerous and heavily used two-lane highways in Ohio. By opening up Crane Creek to boat fishing the refuge would be encouraging a very dangerous congestion problem on Route 2. Access to the creek via the lake is also dangerous due to the narrowness of the entrance channel, a steel sheet piling jetty next to the channel and shallow sand bars and debris around the entrance. Sport fishing activities along Crane Creek and Rader Ditch in the vicinity of the visitor parking lot and trail would not be compatable with existing wildlife observation trail activities. Due to the small size of the parking area and heavy use by current visitors fishing users and trail users would be in conflict. Vehicular access to Crane Creek along Rader Ditch is not possible due to narrow dike tops, and conflicts with other trail users and lack of parking space along the dike. In a normal water level year water levels in Rader Ditch in summer drop to less than one foot and Crane Creek approaches one foot in depth with little fishery available in either during low water periods. Areas in the vicinity of the refuge open to public fishing receive considerable litter, bank fires and movement of bank rip-rap. Rader Ditch is subject to rapid flucuations in water levels and any movement of rip-rap along the ditch bank could cause serious erosion problems. Due to the above no areas within Area 6 are proposed for sport or commercial fishing.

2. Darby Division	Acres	Proposed Fishing
Area 1 Pool 1	200	Limited carp removal
Pool 2	25	Limited carp removal
Pool 3	25	Limited carp removal
Pool 4	170	Limited carp removal
Area 2 Borrow Pond	14	Sport fishing (summer)
	434	

Area 1 (Limited carp removal only)

The four pools at Darby are shallow marsh impoundments that are periodically drawan down in summer with water levels raised in fall for waterfowl, wading and shorebird use. Dense stands of a variety of emergent and submergent vegetation are interspersed throughout the area. Waterfowl, wading and shorebird use is high in all pools. The fishery is dominated by carp and other fish capable of withstanding draw down periods. Sport fishing is not proposed due to conflicts with wildlife use, dense vegetation and draw-down water management. Commercial harvest of carp during gravity filling periods would be accomplished only at the control structure and would occur at most a few days per year.

Area 2 (Sport fishing proposed)

A borrow pond was established in the southeast portion of the Darby Division in 1975 as a result of dike construction. The borrow area is located adjacent to Lakeshore Drive just outside Port Clinton, Ohio. Water depth averages 8 feet with little submergent or emergent vegetation present. Waterfowl, wading and shorebird use is low with few birds ever observed using the area. There are no connections to other bodies of water. Survey data collected in 1983 revealed only fathead minnows and a few small bluegill. No stocking of fish has been made to date. Water chemistry indicate moderate fertility of 85 ppm alkalinity and a ph of 8.7.

Sport fishing for individuals 16 years old and under and individuals 65 and older on a seasonal summer (June, July, August) basis is proposed for the borrow pond. A catchable fishery first needs to be established and stocking with fingerling bluegill (500/acre), largemouth bass (100/acre) and channel catfish (100/acre) is recommended. If available, stocking of 4" to 6" bass and channel catfish would produce a catchable fishery sooner and provide better survival. With stocking in 1985 and evaluation in 1986 and 1987 the pond could be opened to public fishing in 1987 if bass reproduction is evident. If a balanced fishery fails to become established, the possibility of fertilization of the pond needs to be evaluated.

Once a balanced fishery of predator and prey fish is established, over-harvest of predator bass with resulant overpopulation of bluegill is likely. Excessive harvest of bass will be addressed by restricting the age of the users with no boats permitted. Open season will be limited to three months initially and shorten if excessive bass harvest occurs. Monitoring of the sports fishery will be conducted annually by creel census and field surveys. Evaluation of the fishery will be accomplished by Ohio DNR fisheries personnel through a cooperative agreement. If in any year state personnel are unable to conduct field surveys, educational organizations and Fish & Wildlife Service personnel may be utilized.

A senior citizen/youth only fishing area is proposed for the Darby borrow pond due to the easy accessibility of the banks for fishing; the intense fishing pressure and competition amoung fishermen in adjacent public fishing areas; and to reduce the pressure on the fishery. The area around the pond is level and mowed with firm level footing adjacent to 90% of the shoreline. Competition among individuals fishing in many of the local public fishing

sites is elbow to elbow and a senior citizen/youth only site may provide a higher quality experience for those less able to compete. By restricting the age of the users some pressure may be taken off the predator species and a balanced fishery maintained for a longer period.

Physical plant needs at the borrow pond include gates to control unauthorized access into closed areas, regulatory signs informing the public on regulations and gravel parking areas and turn arounds. Empty clean 55 gallon drums have been recommended and will be placed in proper locations for channel catfish spawning sites. The pond can be easily fished from the banks and mowing of invading brush will be accomplished annually. Litter pickup will be accomplished by youth programs and volunteers.

A cooperative agreement between the Fish & Wildlife Service and Ohio Department of Natural Resources will provide for public fishing of refuge waters and fishery management by the Ohio DNR on those open waters. An additional agreement between the two parties will permit state game protectors to enforce fishing regulations on open refuge waters.

3. Navarre Division (No sport or commercial fishing proposed)

The 470 acres of wetland at Navarre are periodically drawn down in summer with water levels raised in fall. What little water remains in summer is suitable for carp only. Access to the Navarre wetland is tightly controlled by personnel from the Davis-Besse Nuclear Power Station and public access would not be possible due to security considerations. Neither sport nor commercial fishing is proposed.

West Sister Island (No fishing proposed)

West Sister Island is approximately 82 acres in size located 9 miles offshore in Lake Erie. The refuge portion is 77 acres and is a unit of the National Wilderness System. A heron-egret rookery of over 2,100 nests is located on the island with the active nesting season from April to July. The shoreline of the island is comprised of steep rocky cliffs which are always wet and extremely slick and hazardous. Due to the wildlife/wildland values of the island and the hazards of shoreline fishing, sport fishing can not be realistically considered for West Sister Island.

Cedar Point National Wildlife Refuge

		Acres	Proposed Fishing
Area 1	Pool 1	1460	Limited commercial fishing
	Pool 2	155	Limited commercial fishing
	Pool 3	135	Limited commercial fishing
Area 2	Borrow Ponds	60	Sport fishing (summer, 15 acres)
Area 3	Cedar Point Bay	360	Sport and commercial fishing
		2170	

Area 1 (Limited commercial fishing only)

Pools 1, 2 and 3 are shallow water pools that are periodically drawn down if lake levels permit. Emergent and submergent vegetation interspersion is excellent and waterfowl and marsh bird use is high from March to December. A variety of duck, geese and other marsh birds nest and raise their broods in Area 1. Heron and egret use of the area is high with large numbers of birds observed from spring to fall. Bald Eagles utilize the area for nesting and feeding.

Due to the wildlife values of Area 1 no sport fishing is proposed. Limited commercial harvest at the main water control structure located at the western edge of the pool 1 is proposed during periods of water intake into the pool.

Area 2 (Sport fishing - 15 acres)

Sport fishing proposed for one 15 acre borrow pond. Approximately 60 surface acres of borrow ponds were created during dike construction at Cedar Point NWR. Of the 60 acre total, 45 acres are either not accessible by land or are in high wildlife value habitat within pools 1, 2, or 3 as described above. One 15 acre borrow pond located along the southern boundary of the refuge does meet the requirement of compatibility with wildlife values during the summer months. Sport fishing is proposed for the 15 acre borrow pond during the months of June, July and August.

Diving duck use of the pond is high in spring and fall with moderate to low heron and egret use spring through fall. Canada geese broods use the pond on an occassional basis from late spring to early summer with little other waterfowl use in summer. The pond averages 8 feet in depth with emergent vegetation along the edge and submergent vegetation dense in the narrow eastern arm. Except during extremely high water periods the pond is isolated from other water sources and contamination by rough fish. Access is directly off Yondota Road through City of Toledo property with a dike road running along the southern edge of the pond and a dike along the northern edge.

The existing pond fish population is balanced and healthy with largemouth bass, white crappie and bluegill represented by many year-classes of each species (Table 3). The few large bowfin and buffalo present probably entered from Lake Erie during high water. It is the opinion of both fishery

biologists consulted that fishing pressure of one season could very well eliminate the large predator bass and upset the balance of predator/prey fish. Excessive harvest of largemouth bass will be addressed by permitting no watercraft on the pond.

Physical facilities needed prior to opening the Cedar Point borrow area include: two gates to control access; regulatory signs; a parking area; dike mowing; and clearing a foot trail along the northern edge of the pond. Litter is expected to be a major problem with summer youth programs and volunteers utilized to keep up with the litter. Law enforcement patrols will be required to assure compliance with fishing regulations and all other refuge regulations.

Area 3 (Sport and commercial fishing - per state regulation)

Cedar Point Bay is an area that is an open part of Lake Erie and outside the dike system at Cedar Point Refuge. Fishing has been permitted in the Bay per state regulation since the area became a refuge in 1964. Due to wave and ice action, signing in open water is not deemed practical and the area will be open to public access. Water depth ranges from 1 to 10 feet in depth. Little submerged aquatic vegetation grows due to wave action and there is no emergent vegetation present. Some diving duck use occurs in fall and spring with almost no disturbance from fishing visitors due to low fishing pressure at that time of the year. Marsh and shorebird use is restricted to the shoreline where conflicts with fishing visitors do not arise. Access is by boat only. Fish species present include: carp; drum; shad; bullhead and channel catfish; white bass and possibly walleye.

There are no physical facilities required in permitting public access for fishing. Two jetties are planned by the Corps of Engineers for construction adjacent to the Bay on its eastern edge at Cooley Canal. One of the jetties will have a walkway that will provide for public fishing. Any artificial structures placed in the water for the purpose of improving fishing are not realistic due to severe wave action of the lake in spring and fall.

VII. PHYSICAL PLANT NEEDS

	Gates	Regulatory Signs	Parking Lots
Ottawa			
Metzger Marsh Bay	-	-	-
Darby			
Borrow Pond	2-2,000	1,500	4,000
Cedar Point			
Cedar Point Bay	-	-	-
Borrow Pond	2-2,000	1,500	4,000
	4,000	3,000	8,000

Other Capital investments include initial stocking of fish at the Darby pond and restocking at the Darby and Cedar Point ponds as needed to maintain balanced fish populations. Due to the small number of fish required to establish and maintain both areas the fish may be provided free of charge from either an Ohio State hatchery or a F&WS hatchery.

VIII. EVALUATION AND UPDATE PROCEDURES

Sport Fishing

Evaluation of the sport fishing program on the two borrow ponds open to sport fishing will be completed by Ohio DNR fisheries personnel via a cooperative fishing agreement if possible. If annual sampling is not realistic for the Ohio DNR, then F&WS sampling utilizing Cooperative Fish Unit or Fisheries Assistance personnel will be employed. Fish sampling techniques will be used in both the YCC and SCA youth programs as part of their environmental education requirements. Sampling gear used in youth programs will be borrowed from F&WS Fisheries Assistance. Data from all sampling completed will be provided to Ohio DNR personnel for their evaluation and recommendations. Their recommendations will provide the basis for modification of annual fishing limits, seasons, a possible need for stocking predator species and other modifications to the sport fishing program on the two borrow ponds.

Carp Harvest

The carp control program will be evaluated by annual monitoring of vegetation responses in each unit. Color infrared aerial photos will be used to evaluate wetland vegetation responses to management practices. By maintaining carp harvest records per unit and vegetation responses per annual water management plans, the effectiveness of an adult carp control program can be monitored.

IX. COOPERATION AND COORDINATION

All local and state newspapers were provided news releases concerning the review being conducted in regard to possible sport fishing at the Ottawa Complex. Several articles appeared in local papers and several letters were received.

Project Manager Tansy met with: F&WS Area Fishery Biologist, Charles Mass, twice at the refuge; Ohio DNR District Fishery Biologist Darrell Allison, once; and with Ohio DNR Wetlands Research & Management Supervisor, Karl Bednarik. Various topics of possible fishery programs were discussed.

If this plan is to be implemented, two cooperative agreements with the Ohio DNR need to be completed and one right-of-way permit for public access needs to be secured from the City of Toledo. The first cooperative agreement with the Ohio DNR concerns fishery management assistance that would provide for annual monitoring, advice on management actions and possible fish stocking. The second Ohio DNR agreement provides the Division of Law Enforcement with the authority to enforce state fishing regulations and special refuge fishing regulations on the areas open to fishing. The target date for completion of both agreements is February 1, 1985.

Before any capital investment is made in the Cedar Point borrow pond fishing site, a right-of-way permit that would allow public access across City of Toledo property should be secured. Initial contacts with city officials indicate a probable favorable response to such a request. A target date for a right-of-way permit from Toledo would be 1 December 1984.

X. ALLOCATION OF RESOURCES

The following table and task and responsibility lists summarizes required staff days for accomplishment of this plan. These are estimates and may not reflect actual staff requirements. Until completion of a management agreement with Ohio DNR for fishery assistance it is not known if Ohio or the F&WS will have responsibility for annual evaluations and sampling.

Task Responsibilities are as Follows:

1. Ottawa Refuge Complex
2. F&WS - Fishery Assistance
3. Ohio DNR - Fishery Management
4. Ohio DNR - Law Enforcement

Tasks for Completion of Fishery Program:

a. Completion and approval of Fish Plan, Environmental Assessment, concurrence from Ohio DNR, implement Cooperative Agreements and required right-of-way.
b. Parking facilities installation and maintenance.
c. Signing-ordering and installation.
d. Trail/dike clearing and mowing.
e. Stocking and restocking
f. Fishery monitoring, Evaluation and Management Recommendations Revisions to Management Plan.
g. Law Enforcement.
h. Litter pickup (weekly)
i. Evaluation of Carp Control

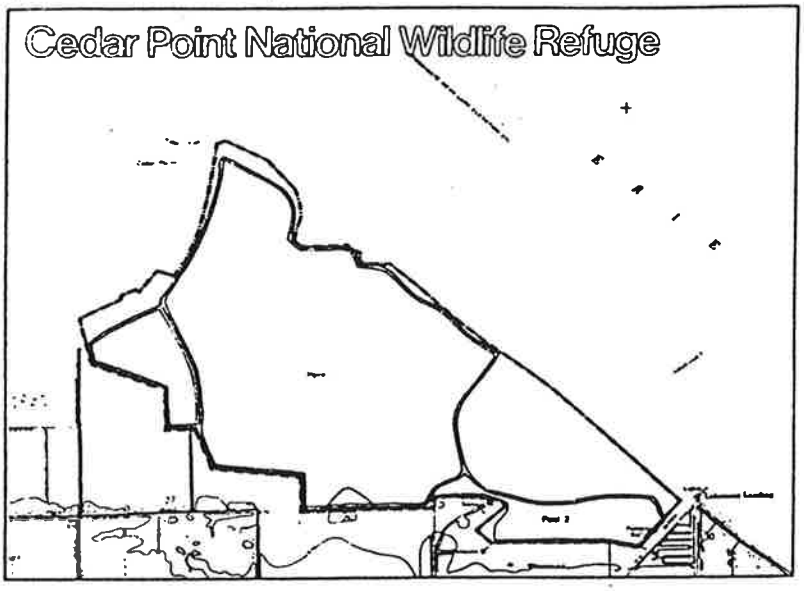
XI. COMPATIBILITY AND FUNDING STATEMENT

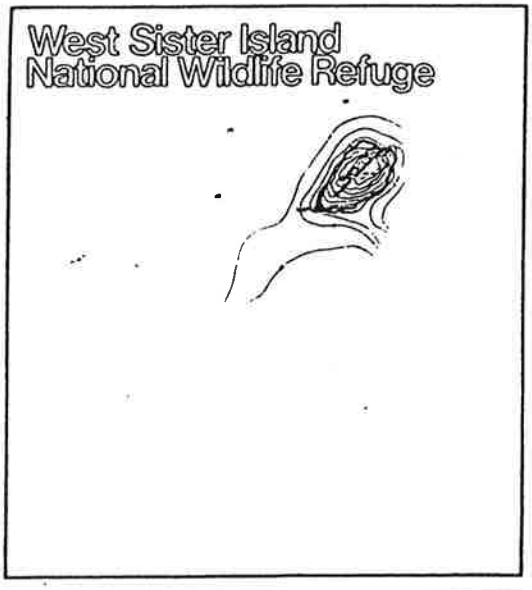
Ottawa NWR was established in July 1961 under the authority of the Migratory Bird Conservation Act to preserve a portion of the remaining Lake Erie marshes. Cedar Point NWR was established by donation in December 1964 with the stipulation that it be managed for wildlife conservation purposes. Opening Ottawa and Cedar Point NWR's for public fishing will result in only very minor disturbances to refuge habitat. By selecting only those areas where fishing would cause little disturbance and selecting the least disruptive time of year for public access this fishing program is compatible with the purposes for which both refuges were established and is in compliance with the Refuge Administration Act. The initial cost of the Cedar Point NWR fishing program will be approximately $5,400 in FY 85 and $3,200 in FY 86 and the combined cost of the Ottawa and Cedar Point programs in FY 87 will be $8,850 with annual costs thereafter for both program being $5,300. Within the annual refuge budget of approximately $230,000 the necessary funds are available for the administration of the fishing program. Therefore, the opening of Ottawa and Cedar Point NWR's to sports fishing is in compliance with the Refuge Recreation Act.

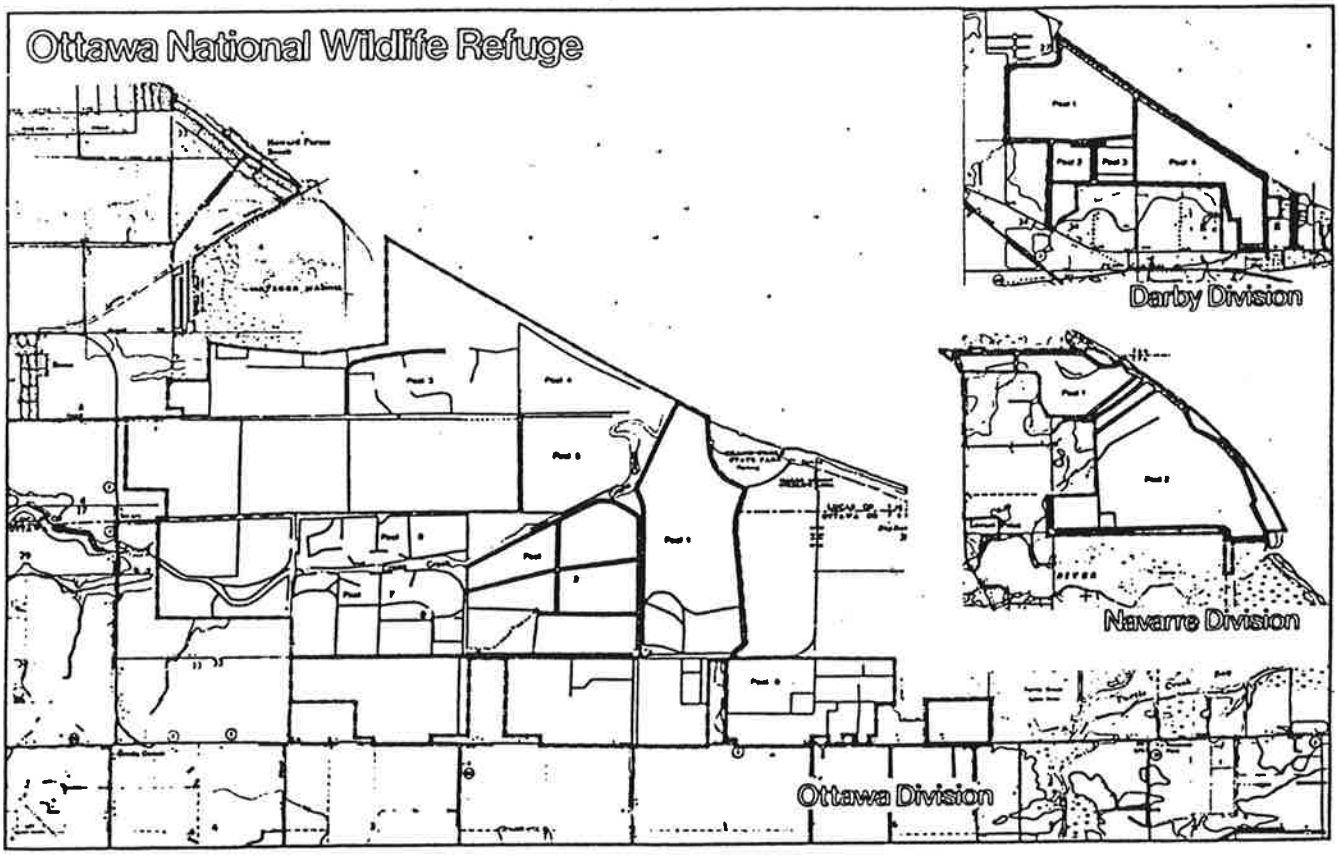
Unit/Task		Responsibility	Year 1 85 SD (FTE) $		Year 2 86 SD (FTE) $		Year 3 87 SD (FTE) $		Year 4 88 SD (FTE) $	
Cedar Point Borrow	a	1	5(.02)	500	--		--			
	b	1	5(.02)	3,000	--		2(.01)	300	2(.01)	200
	c	1	3(.01)	1,000	2(.01)	300	2(.01)	300	2(.01)	300
	d	1	10(.04)	500	5(.02)	250	5(.02)	250	5(.02)	250
	e	2,3	--		2(.01)	200	2(.01)	200	2(.01)	200
	f	2,3			4(.02)	600	4(.02)	600	4(.02)	600
	g	1,4			5(.02)	500	5(.02)	500	5(.02)	500
	h	1			24(.10)	750	24(.10)	750	24(.10)	750
Darby Borrow	a	1	2(.01)	200	--		--		--	
	b	1	--		--		5(.02)	3,000	2(.01)	200
	c	1	--		--		3(.01)	1,000	2(.01)	300
	d	1	--		--		1(.01)	100	1(.01)	100
	e	2,3	2(.01)	200	--		--		--	
	f	2,3	--		4(.01)	600	4(.02)	600	4(.02)	600
	g	1,4	--		--		5(.02)	500	5(.02)	500
	h	1	--		--		24(.10)	750	24(.10)	750
TOTALS			27(.10)	5,400	46(.17)	3,200	91(.41)	8,850	82(.36)	5,250

FISHERY MANAGEMENT PLAN

APPENDIX







OTTAWA NATIONAL WILDLIFE REFUGE COMPLEX

Oak Harbor, Ohio

prepared for:
U.S. Dept. of the Interior
Fish and Wildlife Service

prepared by:
Miller, Wihry & Lee/EDAW

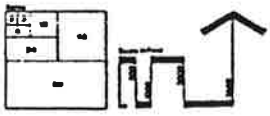


EXHIBIT 1

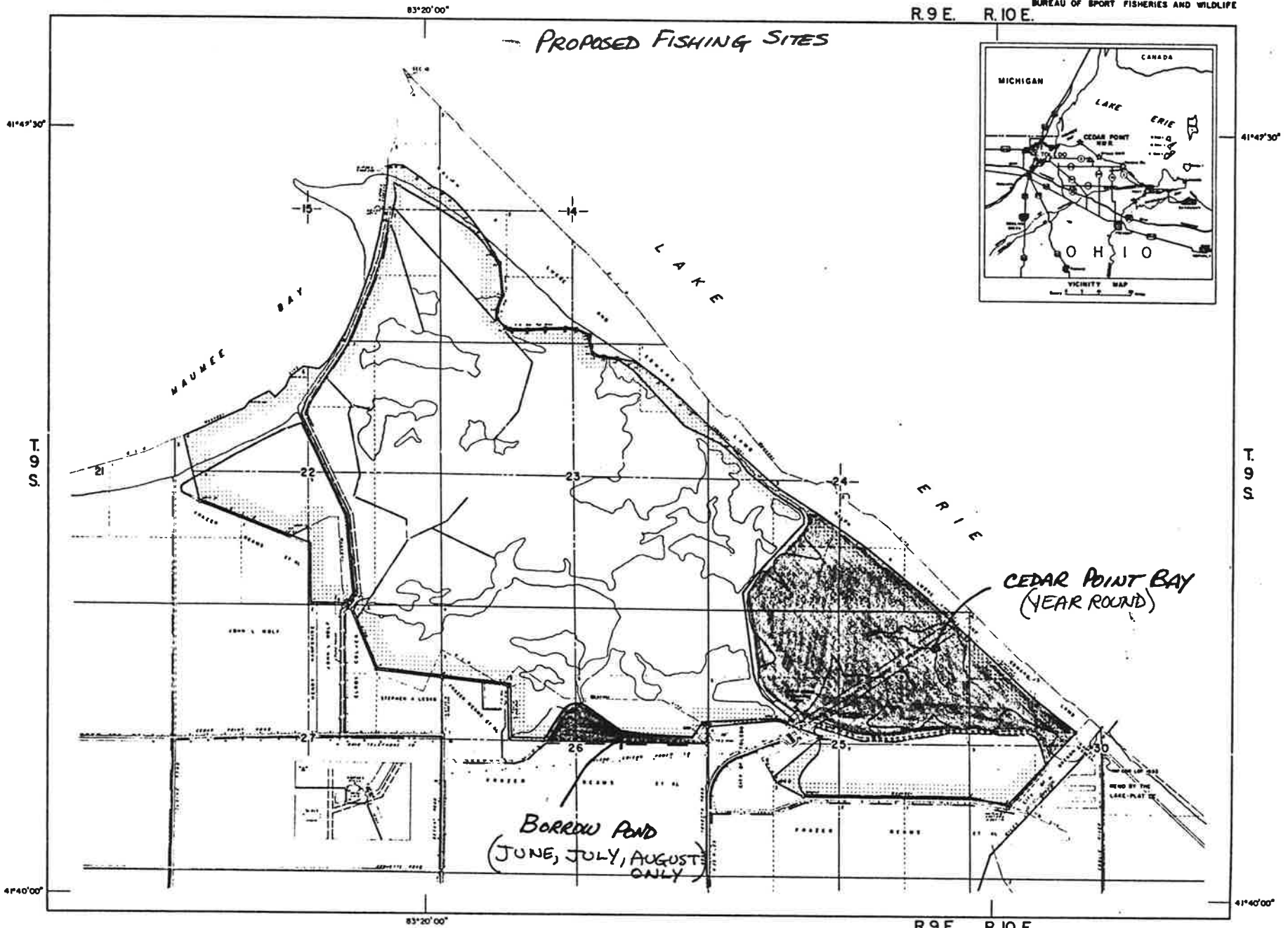
CEDAR POINT NATIONAL WILDLIFE REFUGE

LUCAS COUNTY, OHIO

MAP 3.

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



COMPILED IN THE DIVISION OF ENGINEERING
FROM AERIAL PHOTOGRAPHS AND SURVEYS
BY THE B.S.F.&W. & B.L.M.

MINNEAPOLIS, MINNESOTA

APRIL, 1967

MICHIGAN MERIDIAN

TOWNSHIP DIAGRAM

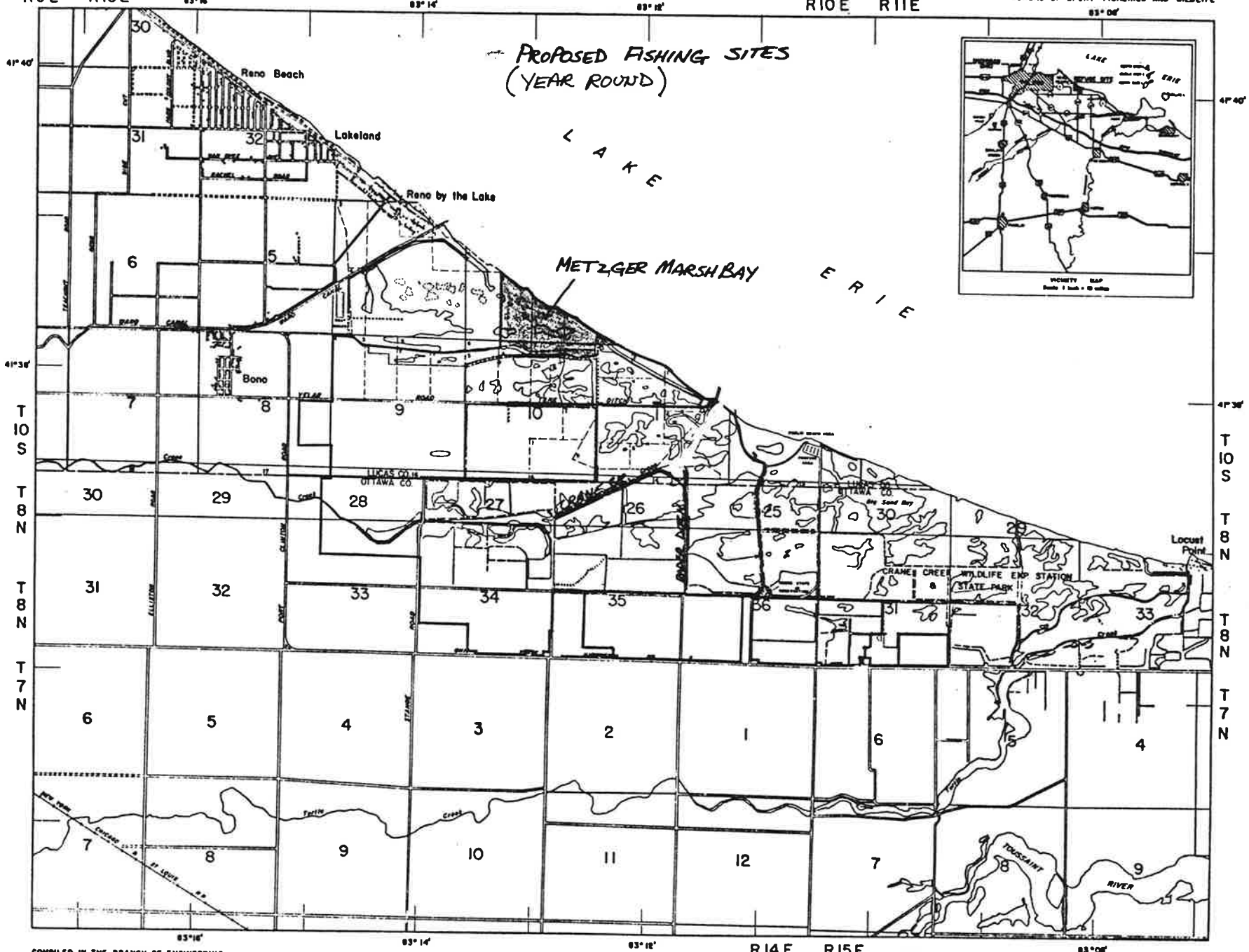
MEAN DECLINATION 1965

MAP 1.

OTTAWA NATIONAL WILDLIFE REFUGE

LUCAS AND OTTAWA COUNTIES, OHIO

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



COMPILED IN THE BRANCH OF ENGINEERING
FROM AERIAL PHOTOGRAPHS AND SURVEYS
BY THE U.S.G.S.

MINNEAPOLIS, MINNESOTA

SEPTEMBER, 1960

MICHIGAN AND FIRST PRINCIPAL MERIDIANS

Scale 0 20 40 80 120 160 CHAINS
0 1/4 1/2 1 1 1/2 MILES

TOWNSHIP DIAGRAM

MEAN DECLINATION 1960

OTTAWA NATIONAL WILDLIFE REFUGE (DARBY DIVISION)

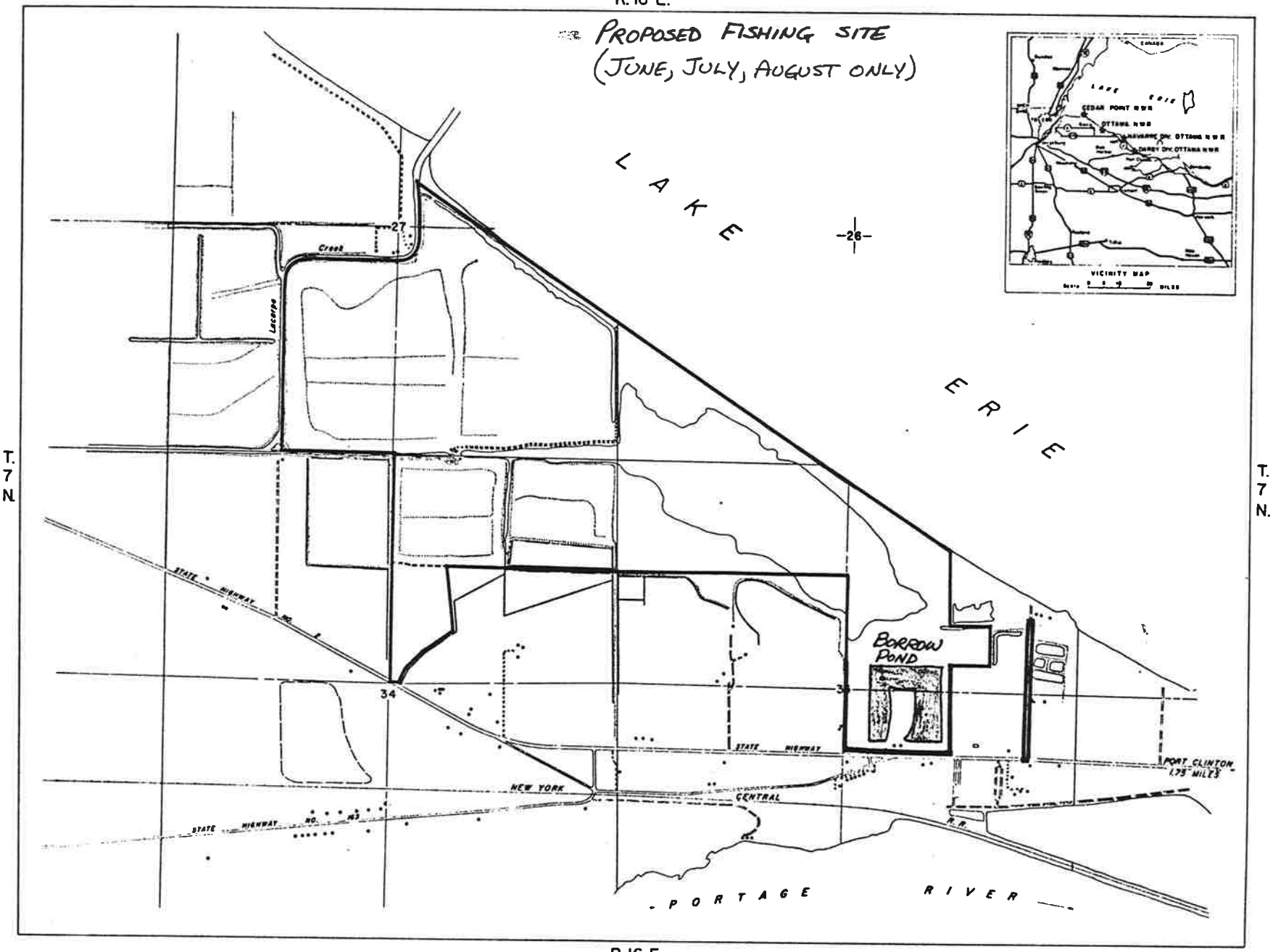
MAP 2

OTTAWA COUNTY, OHIO

R. 16 E.

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



R. 16 E.
FIRST PRINCIPAL MERIDIAN

Scale 0 400 800 1600 2400 3200 FEET

TOWNSHIP DIAGRAM

MEAN DECLINATION 1965

COMPILED IN THE BRANCH OF ENGINEERING
FROM AERIAL PHOTOGRAPHS, SURVEYS BY
THE B.L.M. & G.M. BARTON SURVEY CO.

MINNEAPOLIS, MINNESOTA

SEPTEMBER, 1967

3R. OHIO

RESUME OF FISHERIES HARVEST, 1983[1]

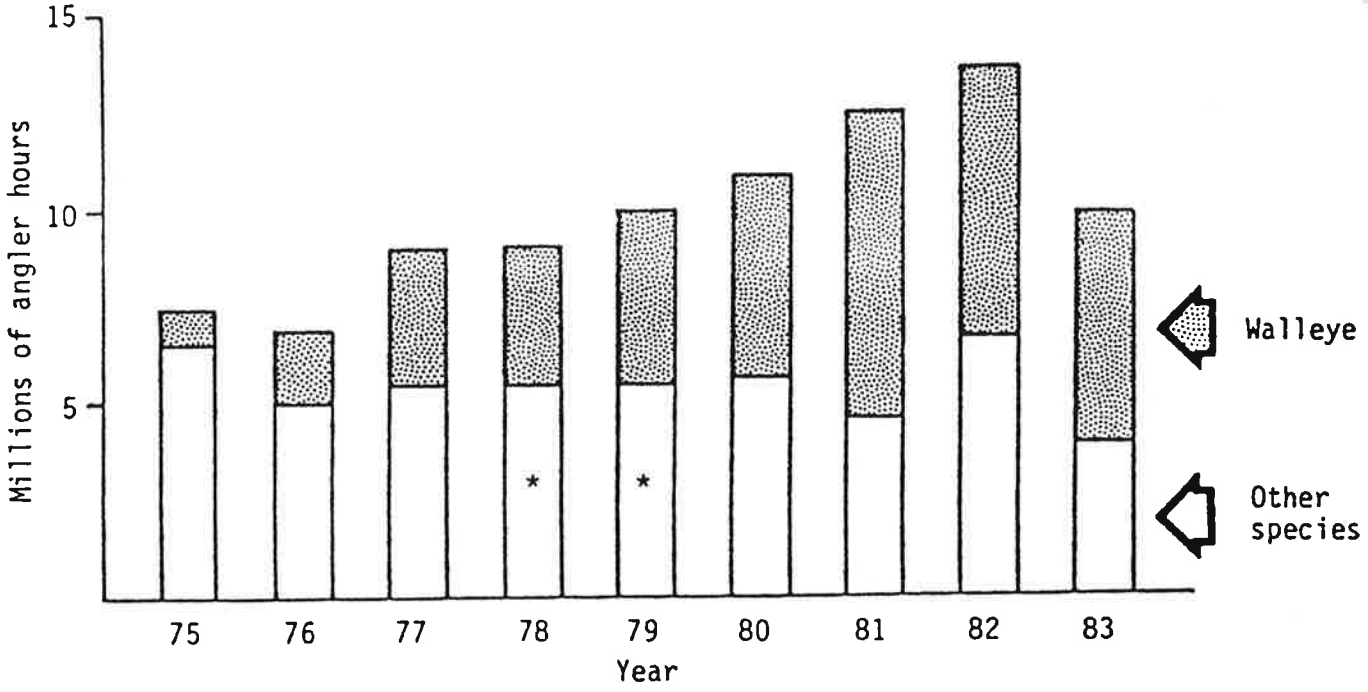
The total estimated Ohio Lake Erie fish harvest in 1983 was 9.8 million pounds. The sport fishery harvested 5.8 million pounds, and the commercial fishery harvested 4.0 million pounds. The numbers and pounds harvested by the sport fishery, pounds harvested by the commercial fishery, and the percent sport harvest for major sport species are presented in Table 1.

Table 1. Harvest of major sport species.

SPECIES	SPORT NUMBERS	SPORT POUNDS	COMMERCIAL POUNDS	(SPORT)
Walleye	1,862,438	3,164,361	--	100%
Yellow Perch	5,345,534	1,151,486	266,019	81%
White Bass	1,724,787	912,062	827,924	52%
Channel Catfish	97,836	88,356	212,880	29%
Smallmouth Bass	71,212	111,200	--	100%
Freshwater Drum	311,262	405,891	870,068	32%
White Perch	43,373	8,008	112,318	7%

Sport Fishery

A comprehensive survey was conducted in 1983 to determine the sport angler utilization of Ohio's Lake Erie waters. This survey, initiated in 1975, has indicated an increase in the number of angler hours annually expended by the sport fishery through 1982. Angler hours decreased from the record high of 13.6 million hours in 1982 to 9.8 million hours in 1983 (Figure 17).



*Estimated as surveys were not conducted for other species

Figure 17. Ohio's Lake Erie sport fishing effort.

1. From Lake Erie Fisheries Unit Staff, Ohio DNR, Sandusky, Ohio " Status Of Ohio's Lake Erie Fisheries" February 1984

TABLE 2.

Fishing Facilities in the Vicinity of Ottawa Refuge
(Lake Shore Toledo to Port Clinton)

	Facility	Ownership	Parking Capacity	Access
1.	Cullen Park	Toledo	200	Shore
2.	Bayview Park	Toledo	100	Shore
3.	Lucas County	County	300	Shore
4.	Metzger Marsh	State	200	Pier, Shore
5.	Crane Creek Park	State	400	Shore
6.	Turtle Creek Access	State	35	Shore
7.	Toussaint Wildlife Area	State	40	Shore
8.	Little Portage	State	50	Shore
9.	Portage River Access	State	50	Shore
10.	Port Clinton Pier	Port Clinton	120	Pier, Shore
11.	Catawba State Park	State	250	Pier, Shore
12.	West Harbor Access	County	250	Shore
13.	West Harbor Park	State	35	Shore
14.	East Harbor Park	State	200	Shore
			2,230 cars	

In the above 14 facilities there are 15 launching ramps.

From Ohio DNR Publication 137(R1077) "Lake Erie Fishing Services & Facilities"

Table 3. Ottawa National Refuge - Cedar Point Borrow Pit: Catch from 104 min electrofishing line, 50-ft seine haul (4 ft X 5 ft X3/16 in bar mesh, with bag), 18 h set of an experimental gill net and 2 fyke nets. 11-12 July 1983.

Total Length (mm)	Largemouth bass	White crappie	Bluegill	Pumkin-seed	Green sunfish	Hybrid sunfish	Orange-spotted sunfish	Brown bullhead	Gizzard shad	Yellow perch	Goldfish	Carp	Buffalo	Bowfin
20-29			1											
30-39														
40-49	1		3											
50-59	1		1											
60-69			5				1							
70-79			2	1			1							
80-89			7				1							
90-99	1	1	26		2									
100-109	5	5	18							1				
110-119	8		9				1			2				
120-129	13	4	5		1									
130-139	15	5												
140-149	11	2	3											
150-159	9	2	3											
160-169	4	11	5						1					
170-179	4	5	5						1	1				
180-189	2	15	2			1								
190-199	1	11	2							1	1			
200-209	3	1												
210-219	1													
220-229		1												
230-239	1	3												
240-249		5												
250-259	2	5												
260-269	1	6						1						
270-279		3						1						
280-289	1													
290-299	2	2												
300-309	1	3												
310-319	3	2												
320-329	1	3												
330-339														
340-349		1												
350-359											350-359	1		
360-369	1										360-369			
370-379	2										370-379			
											380-389			
											390-399	1		
											400-409	1		
											410-419			
											420-429	1		
											430-439	4		
											440-449	1		
											450-459			
											460-469	2		
											520-529	1	2	
											530-539	1		
											690-699		1	